

REMARKS

The Office Action mailed October 8, 2003 has been carefully considered by applicant.

Examiner Interview

Applicant appreciates the Examiner extending the courtesy of an interview on January 6, 2003. Applicant acknowledges the Examiner's preliminary acceptance of the claim term "light metal" as satisfying the requirements of 35 USC §112, second paragraph. For clarity, applicant remarks regarding the outstanding claim rejections under 35 USC §112 and 35 USC §103 are set forth below.

Information Disclosure Statement

The Examiner states that the Information Disclosure Statement filed January 23, 2003 failed to include PTO Form 1449 listing the patents for consideration by the Patent Office. However, according to the applicant's records, Form 1449 was submitted along with a cover letter specifically referencing the form on January 17, 2003. For the Examiner's reference, the present Amendment includes a copy of this originally submitted Information Disclosure Statement, including PTO Form 1449. The Examiner is thus requested to now consider the European and German Patent Publication Nos. 0 977 331 and 3 934 590 in the present application.

Specification

In accordance with the Examiner's requirement, applicant has amended the Abstract of the Invention to comply with MPEP §608.01(b). By this amendment, no new matter has been added.

Claim Rejections under 35 USC §112

Claims 1-31 have been rejected under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

By the present amendment, claims 1-31 are cancelled and claims 32-67 are added to more particularly point out and distinctly claim the subject matter of the invention.

Regarding the Examiner's specific objection to the term "light" as rendering the claims indefinite, applicant respectfully disagrees. The term "light metal" is not only fully described in the present specification, but is also a technical term that is well known and used in the art as defining a metal other than steel, such as, for example, aluminum or the like. The specification at page 3, lines 11-27, included here below for reference, fully defines the term "light metal".

The quite different materials properties of steel and light metal, in of particular aluminium, are to be taken into account. The yield point of steel used for vehicle construction is usually higher than that of corresponding rolled sheet made from aluminium. Very complex and diversified aluminium extruded profiles of very high dimensional quality are available comparatively economically. By contrast, complex steel profiles are difficult to produce, which is reflected in their high cost, and they are difficult to vary. Due to the physical properties of aluminium rolled sheet, its formability as a result of deep drawing, stamping or bending is inferior to that of steel sheet. As a result, aluminium sheet is associated with larger radii and smaller degrees of clearance during constructional shaping of the parts. The same applies to other light metals and light metal alloys, in particular also to magnesium.

In addition, as evidence of the fact that the term "light metal" is definite and well known in the art, the Examiner is asked to refer to Webster's Third New International Dictionary of the English Language Unabridged, copyright 1993, page 1309, left column, where it reads:

- **light metal:** A metal or alloy of low density (as aluminum, magnesium, titanium and beryllium, and alloys composed predominantly of one or more of these metals).

The Examiner is also asked to refer to McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition, 1993, page 1138, left column, where it reads:

light metal: A metal or allow of low density, especially aluminum and magnesium alloys.

In addition, the Examiner is asked to refer to the following representative U.S. patents, each of which incorporate the term “light metal” into patent claims:

- Frank U.S. Patent No. 5,255,953, 10/26/1993 (Claim 1 recites an impact girder for a vehicle door extruded from a “light metal” alloy)
- Enning et al U.S. Patent No. 5,346,275, 9/13/1994 (Claim 2 recites a rear end of a vehicle body having an upper and lower cross member formed as extruded “light metal” sections)
- Kreis et al U.S. Patent No. 5,385,383, 1/31/1995 (Claim 1 recites a door pillar assembly including a “light metal” tubular pillar member)
- Winter et al U.S. Patent No. 5,398,989, 3/21/1995 (Claim 9 recites a cover plate comprising a “light metal” casting)
- Klages et al U.S. Patent No. 5,466,035, 11/14/1995 (Claim 1 recites a motor vehicle front end including a “light metal” alloy extruded hollow section)
- Brückner U.S. Patent 6,336,675, 1/8/2002 (Claim 2 recite supporting arm parts including a “light metal” extruded profile)

Thus, because the term “light metal” is well defined by the industry, applicant respectfully requests withdrawal of the §112 rejection. The Examiner is encouraged to call the undersigned attorney for applicant with additional questions or comments.

Regarding the Examiner’s objection to the term “reinforcement and connection sheets” on line 2 of claim 7, applicant respectfully disagrees that these terms render the claims indefinite. The present application thoroughly defines the terms “reinforcement and connection sheets” on page 8, lines 5-24. Briefly, contrary to the Examiner’s understanding, a “reinforcement and connection sheet” provides both reinforcement and connection means on the supporting frame in more heavily loaded areas. Therefore, contrary to the Examiner’s assertion, the reinforcement and connection sheet is an element that provides both of the recited functions.

Regarding the remainder of the Examiner's language rejections, claim 1-31 have been cancelled and new claims 32-65 have been added to more clearly define the subject matter of the present invention and to overcome the remaining §112 rejections.

Claim Rejections under 35 USC §103

Claims 1-6, 10-13, 18, 19, 24 and 26-28 have been rejected under 35 USC §103(a) as being unpatentable over Widrig et al U.S. Patent No. 4,876,825 in view of German Patent Publication No. 19616788. Claims 7-9, 15-17, 20-23, 25 and 29-31 have been rejected under 35 USC §103(a) as being unpatentable over Widrig et al '825 in view of German Patent Publication No. 19616788, and further in view of Cho U.S. Patent No. 6,367,863. Claim 14 has been rejected under 35 USC §103(a) as being unpatentable over Widrig et al '825 in view of German Patent Publication No. 19616788, and further in view of Dunneback U.S. Patent No. 6,382,707.

By the present amendment, claims 1-31 are cancelled and claims 32-67 are added to more clearly define the subject matter of the present invention and render same allowable over the applied references.

Claim 32

New claim 32 replaces cancelled claim 1 and recites a lightweight door for motor vehicles. Among other things, the lightweight door of claim 32 has a U-shaped supporting frame that is a one piece light metal or a light metal alloy part. The part may be a pressed part or a deep drawn part. In combination, claim 32 also recites inner and outer window gutter profiles made from light metal or a light metal alloy, a lateral impact protection element formed as an extruded profile made from light metal or light metal alloy, and a window frame made from light metal or light metal alloy and fixedly connected to the inner window gutter profile.

The primary reference the Examiner cites in the Office Action is the Widrig et al U.S. Patent No. 4,876,825. The Examiner states that Widrig et al '825, in combination with German Patent Publication 19616788, render the claimed invention obvious. However, applicant respectfully disagrees with this assertion.

Widrig et al '825 discloses a vehicle door having a supporting frame formed of a bottom boom section 11 and upwardly directed side legs 12 and 13. Column 2, lines 29-33 state that the supporting frame (11, 12, 13) may be one piece and formed of aluminum alloy materials. However, for this arrangement, Widrig et al '825 requires that the supporting frame (11, 12, 13) be produced from casting and that the strut (14) is cast into the casting during the time when the latter is produced.

Thus, contrary to the Examiner's assertion, the supporting frame taught by Widrig et al '825 is either formed of separate pieces, or formed of a single piece from a casting. Widrig et al thus does not teach or suggest a U-shaped supporting frame that is a one-piece light metal or light metal alloy part selected from the group consisting of a pressed part and a deep drawn part. In addition, contrary to the Examiner's assertion, part 123 is neither an outer skin, or a deep drawn part. In fact, part 123 forms a flange (column 2, lines 65-66) which designed as a bearing surface for other door parts, especially for the outer wall (column 2, last line/column 3, first line).

Therefore, Widrig et al '825 fails to teach or suggest a U-shaped supporting frame made from one piece of a light metal or light metal alloy sheet as a part selected from the group consisting of a pressed part and a deep drawn part.

German Patent Publication No. 19616788 also fails to teach or suggest a U-shaped supporting frame made from one piece of a light metal or a light metal alloy sheet as a part selected from the group consisting of a pressed part and a deep drawn part. Specifically, the '788 publication merely teaches a lower flange profile (4) which is fastened to a lock mounting (2) and a hinge mounting (3) by mixed jointing compounds and/or rivets.

The unique combination of elements recited by claim 32 has been found to provide many advantages over the motor vehicle doors taught by the prior art. As stated in the present application, the light weight door for motor vehicles of claim 32 meets the design criteria, such as static rigidity requirements, dynamic rigidity requirements and requirements concerning insulation space and the arrangement of installed components, while minimizing cost of construction and maximizing formability as a result of the deep drawn or pressed nature of the light metal or light metal alloy sheet. The make-up

and structural components of the light weight door of claim 32, such as the lateral impact protection element and inner and outer window gutter profiles provide a door for vehicles which has a considerably reduced weight, without negative effects on rigidity.
Page 4, lines 15-18.

Thus, new claim 32 is not rendered obvious by the cited references, alone or in combination. Claim 32 is believed allowable.

Claims 33-35

Claims 33-35 are newly added by the present Amendment and depend directly or indirectly from claim 32. New claims 33-35 are thus believed allowable for the reasons stated above, as well as the subject matter recited therein.

Claims 36-40, 43-46, 51, 52, 57, 59 and 60

Claims 36-40, 43-46, 51, 52, 57, 59 and 60 are added to replace claims 5-6, 10-13, 18, 19, 24, 26 and 27, which have been rejected by the Examiner based upon Widrig et al '825 in view of German Patent Publication No. 19616788. New claims 36-40, 43-46, 51, 52, 57, 59 and 60 depend directly or indirectly from new claim 32 and are thus believed allowable for the reasons stated above as well as the subject matter recited therein.

Claims 41, 42, 48-50, 53-56, 58, 61 and 62

Claims 41, 42, 48-50, 53-56, 58, 61 and 62 are added to replace cancelled claims 7, 8, 15-17, 20-23, 25, 30 and 31, respectively, which have been rejected by the Examiner based upon Widrig et al '825 in view of German Patent Publication No. 19616788 and Cho '863. The new claims depend directly or indirectly from claim 32 and are thus believed allowable for the reasons stated above, as well as the subject matter recited therein.

Cho '863 also fails to teach or suggest a U-shaped supporting frame that is a one piece light metal or light metal alloy part selected from the group consisting of a pressed part and a deep drawn part. Cho '863 merely relates to a reinforcing member for a door hinge.

Claim 47

Claim 47 is added to replace cancelled claim 14, which was rejected by the Examiner based upon Widrig et al in view of German Patent Publication No. 19616788 and Dunneback '707. Claim 47 depends directly from claim 32 and is thus believed allowable for the reasons stated above, as well as the subject matter recited therein.

Dunneback '707 also fails to teach or suggest a U-shaped supporting frame that is a one piece light metal or light metal alloy part selected from the group consisting of a pressed part and a deep drawn part.

Claims 63-65

New claims 63-65 are added to replace cancelled claims 9, 28 and 29. New independent claim 63 recites a lightweight door for motor vehicles having a U-shaped supporting frame that is a one piece light metal sheet or light metal alloy part selected from the group consisting of a pressed part and a deep drawn part. In combination, claim 63 also recites inner and outer window gutter profiles that are light metal or a light metal alloy, a lateral impact protection element and a window frame, each being of light metal or a light metal alloy.

For the same reasons stated above regarding new claim 32, the unique combination of elements recited by claim 63 are neither taught nor suggested by the prior art references. For example, the cited references fail to teach or suggest a U-shaped supporting frame that is a one piece light metal or a light metal alloy part selected from the group consisting of a pressed part and a deep drawn part.

Claims 64 and 65 depend directly from claim 63 and are thus believed allowable for the reasons stated above, as well as the subject matter recited therein.

Claims 66-67

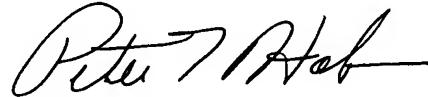
New claims 66 and 67 are added to further define the subject matter of the present invention. Claims 66 and 67 are believed allowable for the reasons stated above as well as the subject matter recited therein.

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The present application is thus believed in condition for allowance with claims 32-67. Such action is earnestly requested.

Respectfully submitted,

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